

PHENIX WEEKLY PLANNING



8/2/2012
Don Lynch

TECHNICAL
SUPPORT
2012

- Move CM north - Done
- Erect MuTr Station 1 Scaffolding - Done
- Prep for Summer Sunday - In Progress
- Prep for MuTr Station 1 South & Stations 2&3 N&S
- Remove MMN East vertical lampshade
- Prep for DC West
- sPHENIX design support
- MPC-Ex design support



Next Week

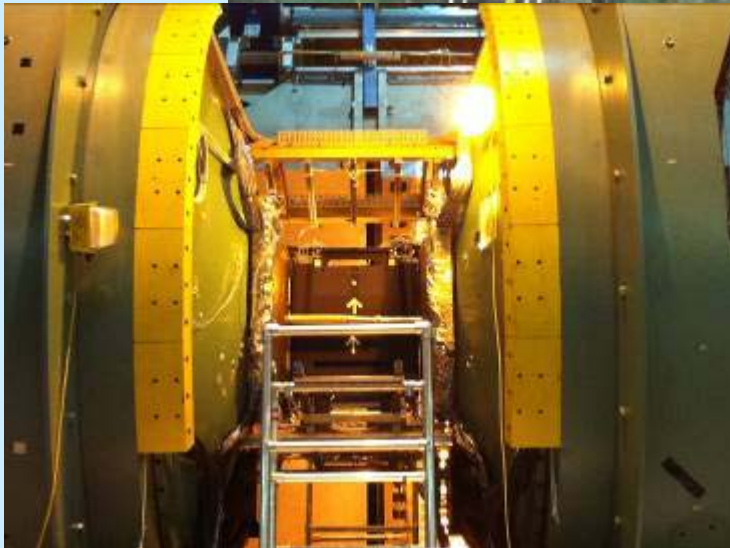
- Move CM north
- Disconnect Station 1 South cables and services
- VTX/FVTX Repairs at Chemistry/Physics
- Prep for MuTr Station 1 South & Stations 2&3 N&S
- Remove MMN East vertical lampshade
- Prep for DC West
- sPHENIX design support
- MPC-Ex design support



PHENIX

VTX Installation 2010 &
2011. 2012 Removal and
re-installation will be
same.

TECHNICAL SUPPORT



8/2/2012

WP Approved

RPC Station 1 North and South Cooling Upgrade



North



South

Work Permit Done



Looking towards RPC3 North
 ← East West →



Looking towards RPC3 South
 ← West East →

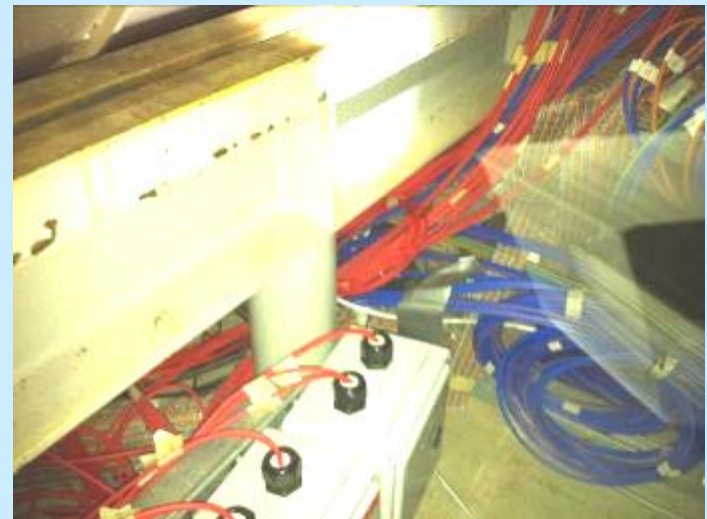
RPC Background Attenuation Project

TECHNICAL SUPPORT ZONE

Under DX at RPC3 North
 ← East West →

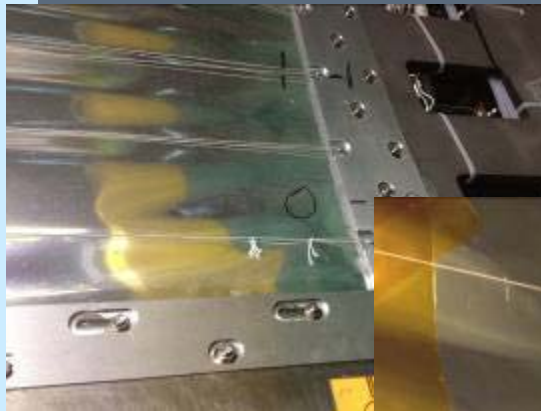
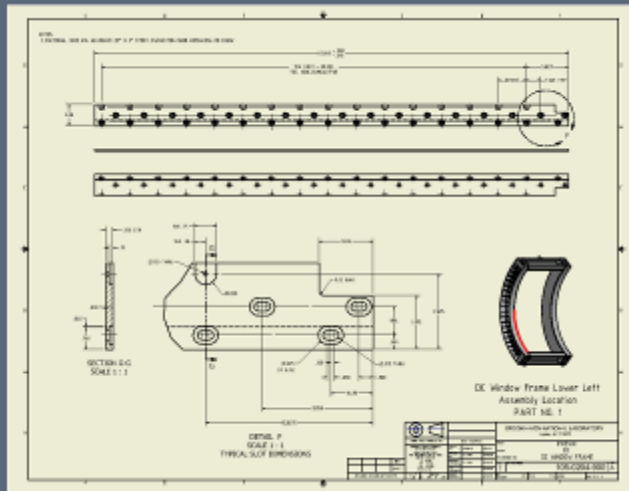


Under DX at RPC3 South
 ← West East →



DC West Upgrade Design and measurements

TECHNICAL SUPPORT



• Station-1 South re-capacitation and termination



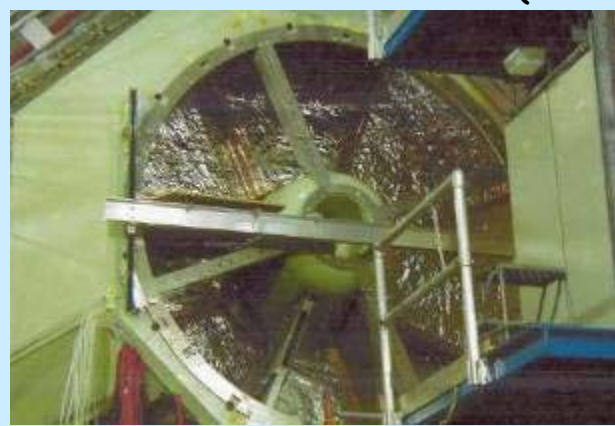
WP Approved



vacuum lifting fixture



view when sta-1 removed (south)



Clamp-on Terminator Installation on North & South Station-3

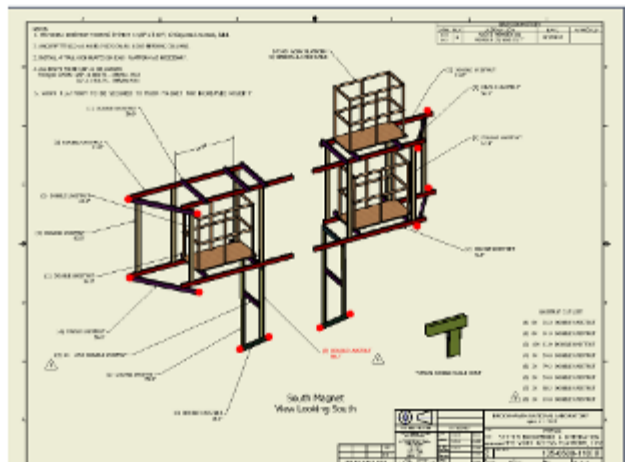
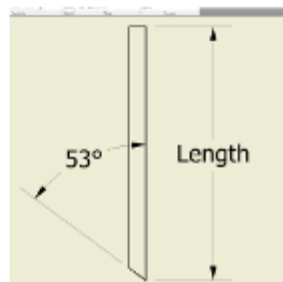
- Lower clamp-on terminators already installed for both north and south sta-3 (bottom 4 octants)
- With new work platforms that reaches all of sta-3; install remaining (upper) clamp-on terminators.

2 WP's Submitted (N & S),
Approved



MUON MAGNET SOUTH UNISTRUT CUT LIST

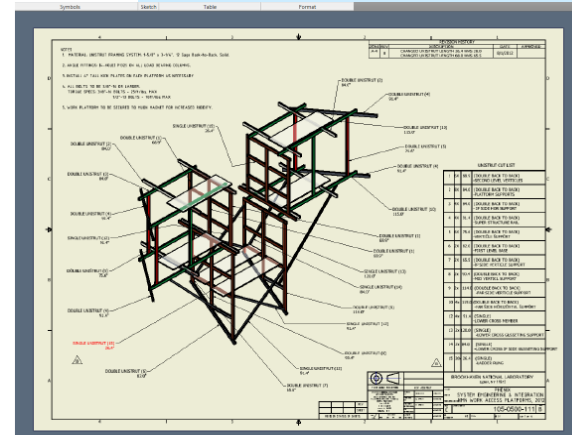
- (1) 8X 36.0 DOUBLE UNISTRUT
- (2) 8X 91.0 DOUBLE UNISTRUT
- (3) 10X 62.0 DOUBLE UNISTRUT
- (4) 4X 56.0 DOUBLE UNISTRUT
- (5) 2X 79.2 DOUBLE UNISTRUT x 53°
- (6) 2X 56.0 DOUBLE UNISTRUT
- (7) 2X 58.2 DOUBLE UNISTRUT x 53°
- (8) 2X 24.8 DOUBLE UNISTRUT



MMS Work Platforms

MUON MAGNET NORTH UNISTRUT CUT LIST

- (1) 6X 68.9 (DOUBLE BACK TO BACK)
-SECOND LEVEL VERTICLES
- (2) 8X 84.0 (DOUBLE BACK TO BACK)
-PLATFORM SUPPORTS
- (3) 4X 84.0 (DOUBLE BACK TO BACK)
-IP SIDE HOR SUPPORT
- (4) 4X 91.4 (DOUBLE BACK TO BACK)
-SUPER STRUCTURE RAIL
- (5) 6X 75.6 (DOUBLE BACK TO BACK)
-VERTICLE SUPPORT
- (6) 2X 82.0 (DOUBLE BACK TO BACK)
-FIRST LEVEL BASE
- (7) 2X 68.0 (DOUBLE BACK TO BACK) x 53°
-IP SIDE VERTICLE SUPPORT
- (8) 2x 90.4 (DOUBLE BACK TO BACK) x 53°
-MID VERTICLE SUPPORT
- (9) 2x 114.0 (DOUBLE BACK TO BACK) x 53°
-FAR SIDE VERTICLE SUPPORT
- (10) 4x 115.0 (DOUBLE BACK TO BACK)
-FAR SIDE HORIZONTAL SUPPORT
- (12) 4x 91.4 (SINGLE)
-LOWER CROSS MEMBER
- (13) 2x 120.0 (SINGLE)
-LOWER CROSS GUSSETING SUPPORT
- (14) 2x 84.0 (SINGLE)
-LOWER CROSS IP SIDE GUSSETING SUPPORT
- (15) 20x 26.4 (SINGLE)
-LADDER RUNG

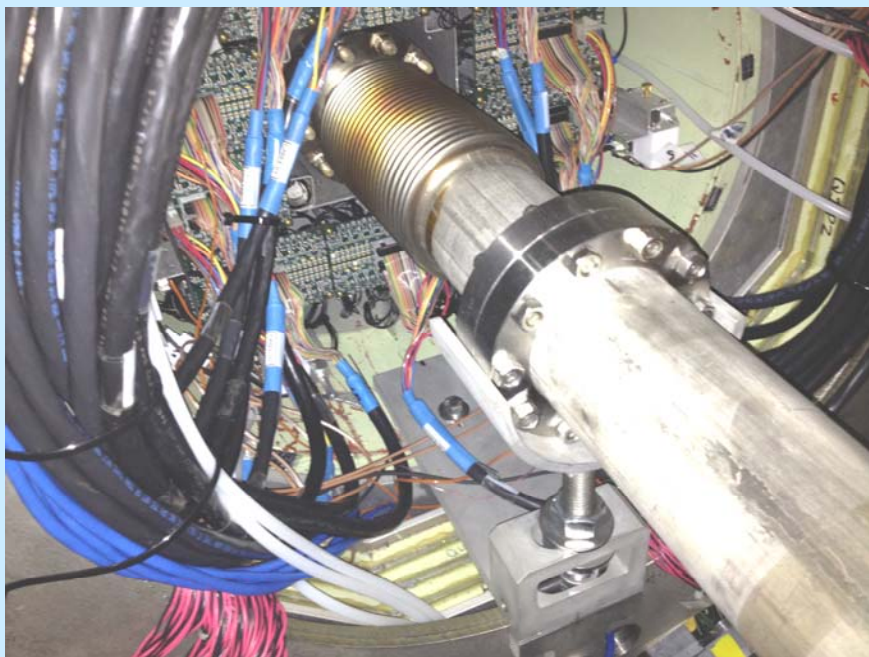


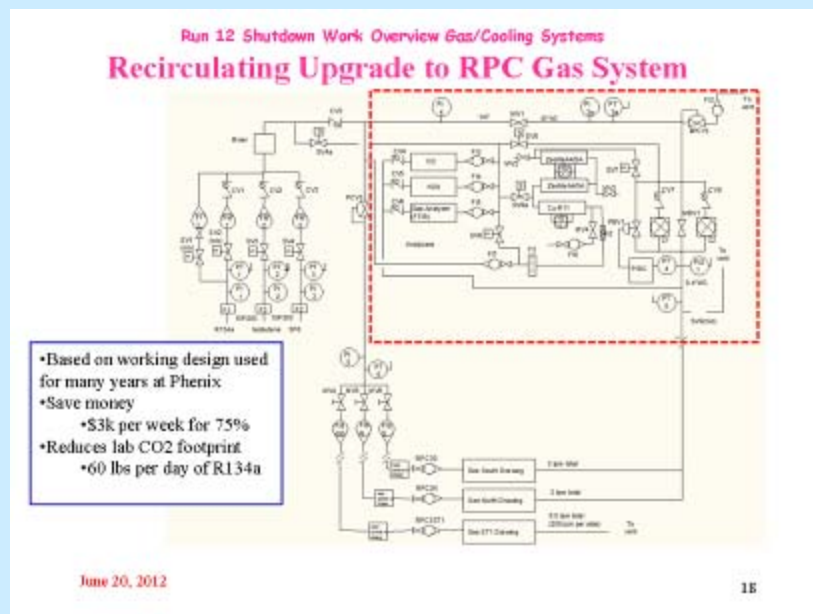
MMN Work Platforms

Design Approval Done, Bargaining Unit Agreement Approved

MPC Repairs -

North MPC Removed for Evaluation





RPC Recirculation Upgrade

VTX/FVTX Cooling Upgrade



MuID Collar IR Holding Area Support



Structural support improvements designed

Parts to be ordered

Installation this fall prior to EC roll in

New Electrical Work for 2012 Shutdown, to be accomplished as time is available

1. Support CAD replacement of Assembly Hall 480V Fused Switch Panels #8H-1, 8H-2, and 8 EMH1. Coordinate temporary power patch while work is being performed and minimize impact on shutdown work.. - Done
2. Add Transient Surge Suppressor to 3 phase power panel on the Central Magnet Bridge.
3. The Gas Mixing House Breaker Panel for the Gas Mixing side is almost out of spare breaker slots and needs to be reviewed for increased capacity panel to replace it.
4. New computer rack replacements/additions for upcoming Run 13 & Rack Room computer infrastructure changes involving power distribution circuit (UPS and normal AC power) re-work - check with Martin Purschke

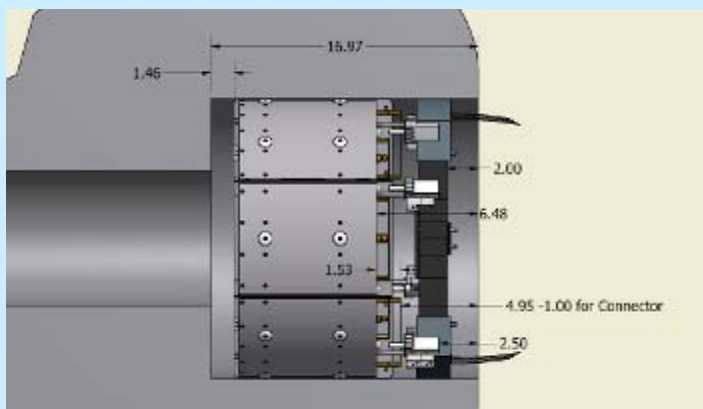
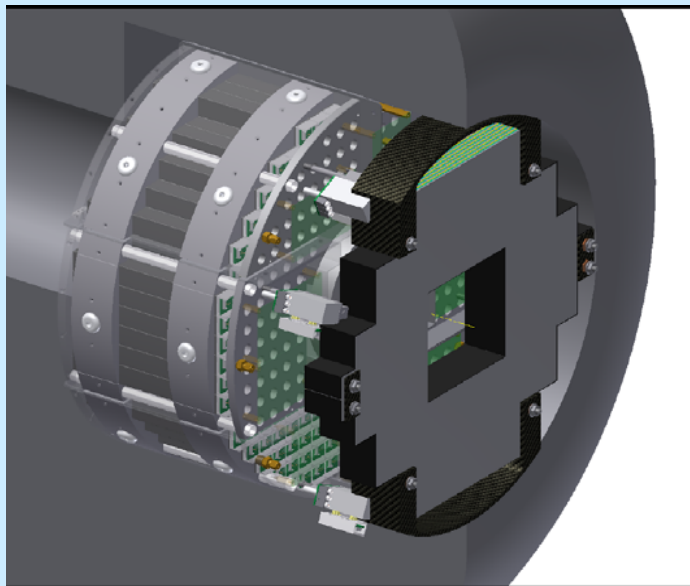
Additional Work for 2012, not yet scheduled, to be fit in as available

1. Replaced aging magnet hoses (CM only)
2. identify obsolete services passing through sill and remove them.
3. Cover for services coming from IR through sill.
4. Plan for stripping out TEC electronics and services to free up TEC racks.
5. Add limit switch and improved spooling control for window washer cable.

PHENIX Shutdown 2012 Electronics Upgrade /Repair

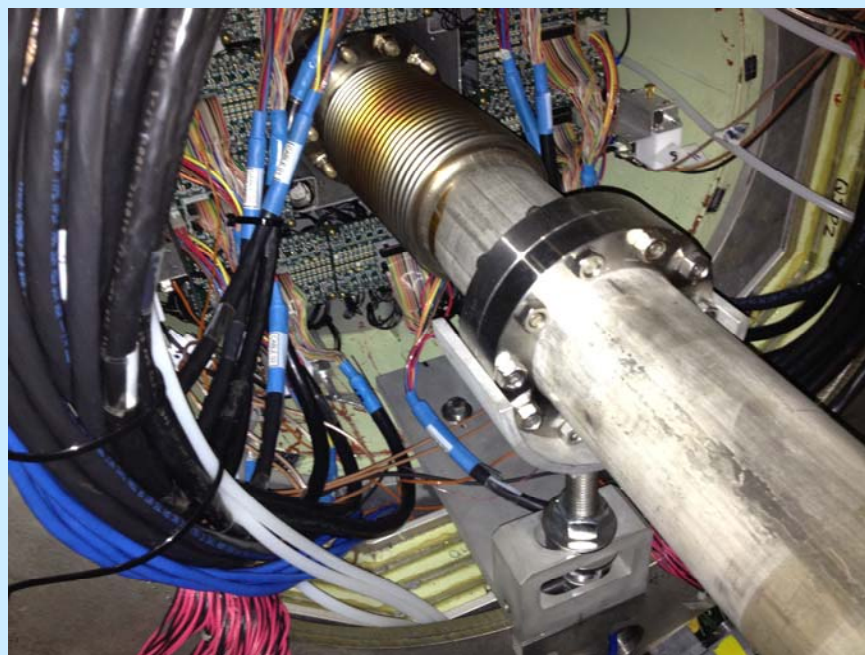
TECHNICAL
SUPPORT
2012

- Replace remaining RS-485 type ADAMs on West carriage with MODBUS/TCP type.
- Install Ethernet switches and MODBUS/TCP ADAMs on Central Magnet arm.
- Install second MODBUS server in counting house.
- Install MTP patch bay and jumpers for FVTX in counting house.
- Add several backup MTP fibers from CH to IR



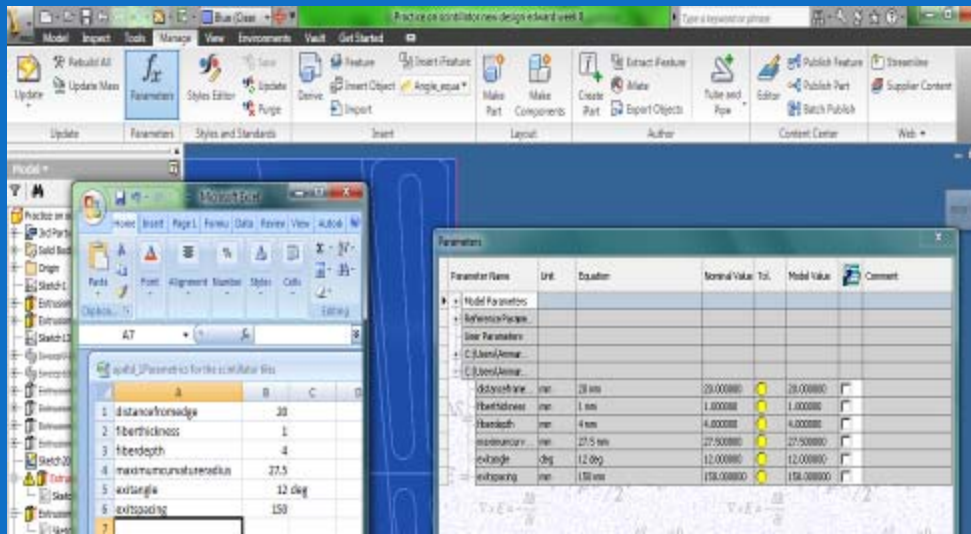
MPC-Ex Upgrade

We will be making measurements and test fitting mockups this summer in preparation for design and fabrication next fall, if proposed upgrade is approved

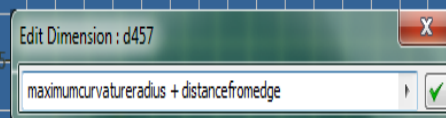
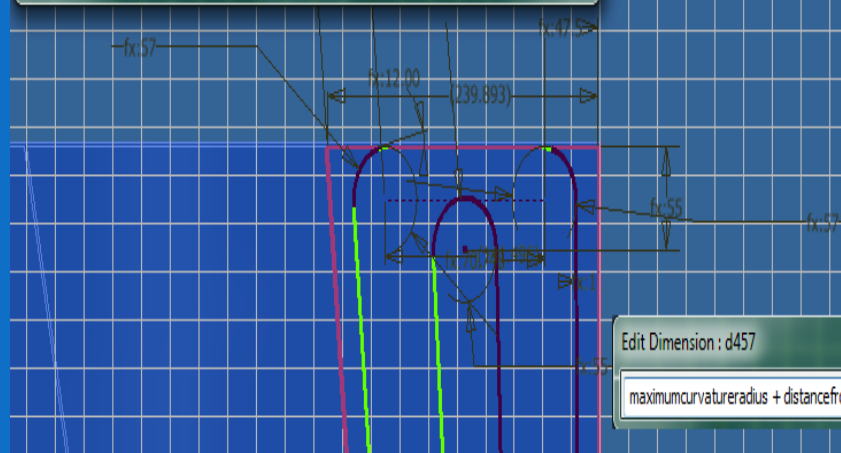
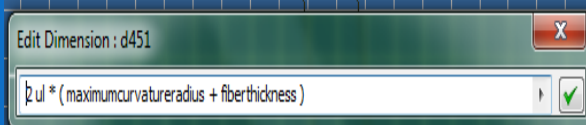


North MPC 07/25/12

Parametrization

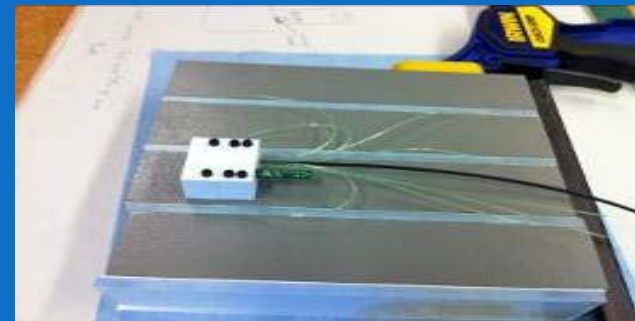
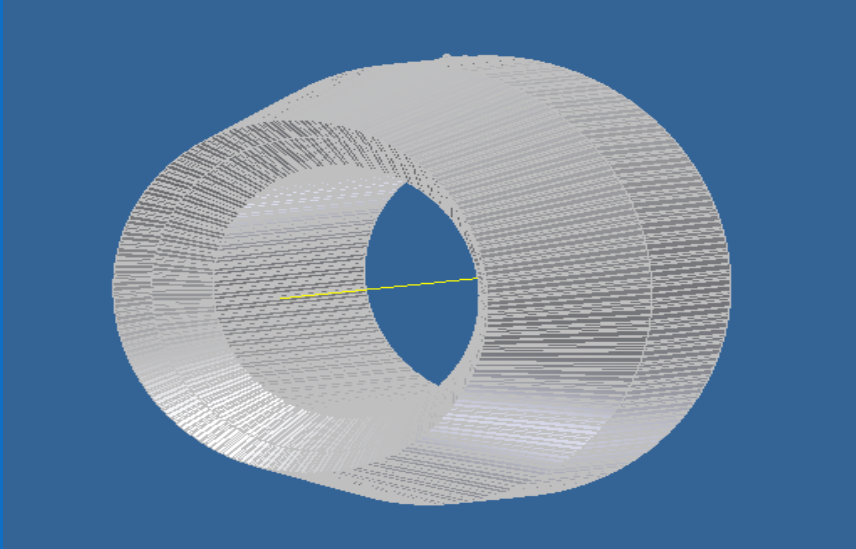
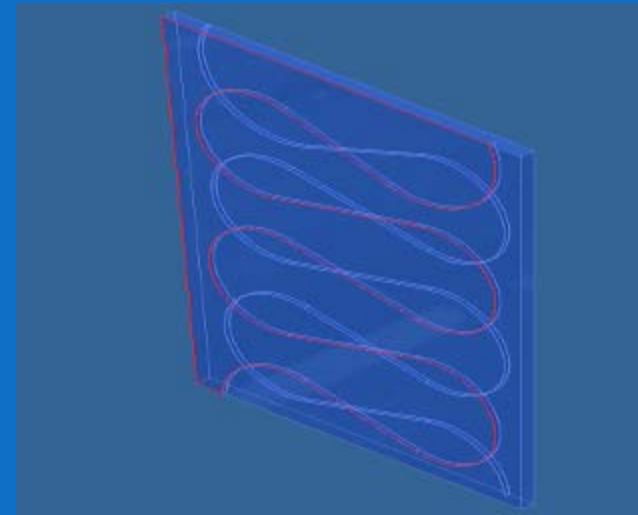
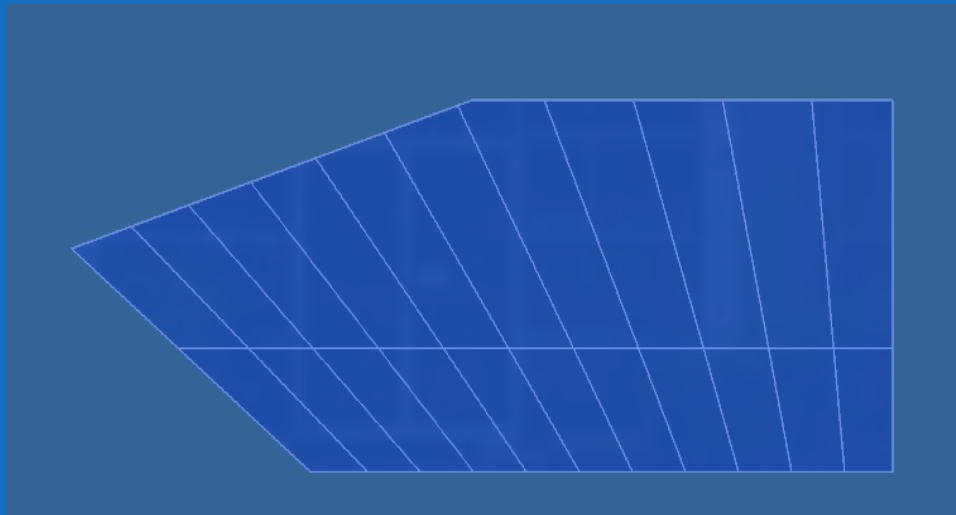


3-D computer software

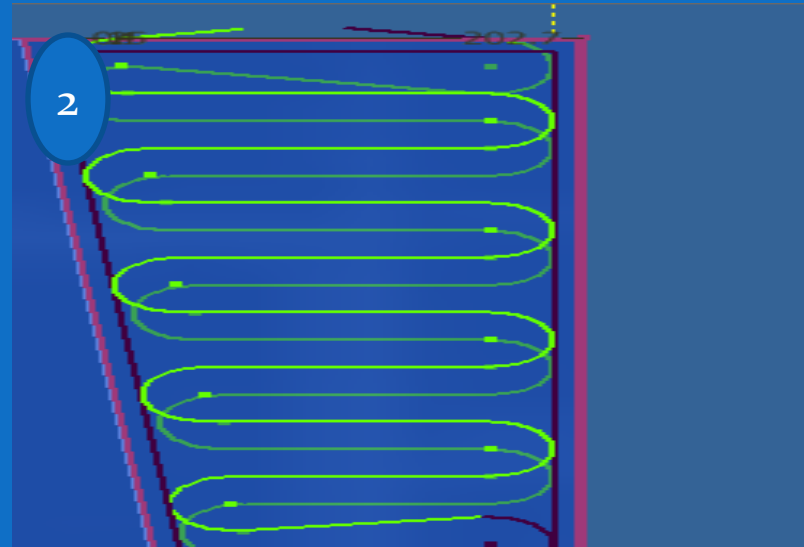
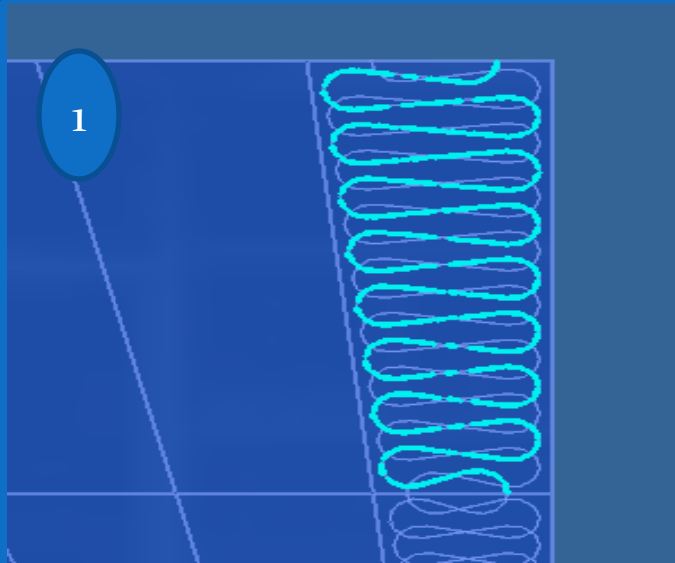


Reference file:
Microsoft Office
Excel





The Setup shown above is a prototype representing the fiber optic cables leaving the scintillator tiles and entering in to the fiber collector. From the fiber collector, the light is collected and data is recorded.



Potential Problems:

- Proportional Modifications (due to constraints) Explanation Pending.

Possible Next Steps:(As far as tiles are concerned

- Manufacture
- Testing
- Modify
- Apply

Designing the Hadron Calorimeter

Patrick Montalto
Advisor: Don Lynch

-
- A cross-sectional diagram of the ATLAS detector. The detector is represented as a series of concentric circles. From the center outwards, the layers are labeled: VTX (Vertex Detector, a small green circle), SOLENOID (a grey ring), EMCAL (Electromagnetic Calorimeter, a blue ring), HCAL INNER (Hadronic Calorimeter Inner, an orange ring), and HCAL OUTER (Hadronic Calorimeter Outer, a thick red ring). A human figure is shown to the left of the detector for scale.

- Will completely enclose the inner components of the detector
- Scintillating material enclosed between adjacent steel plates

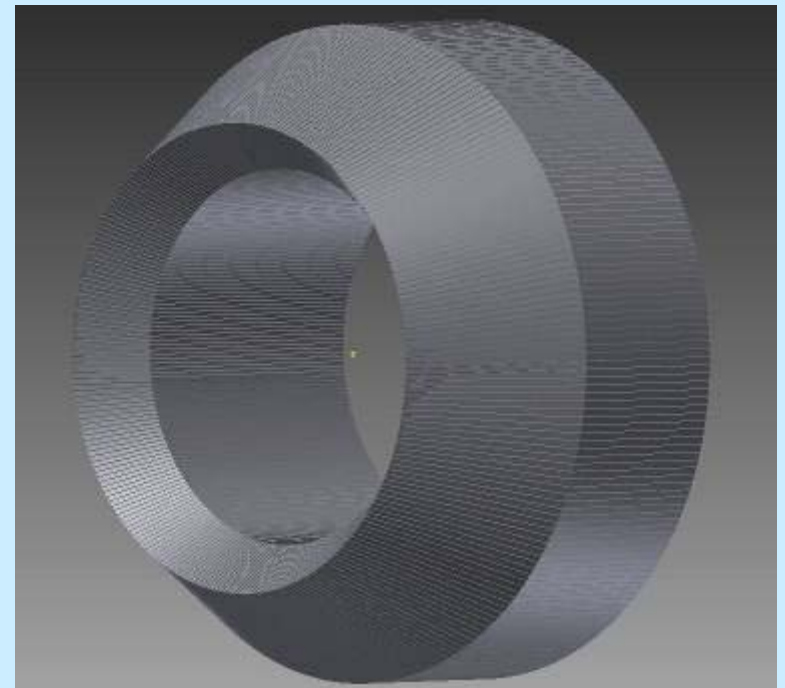
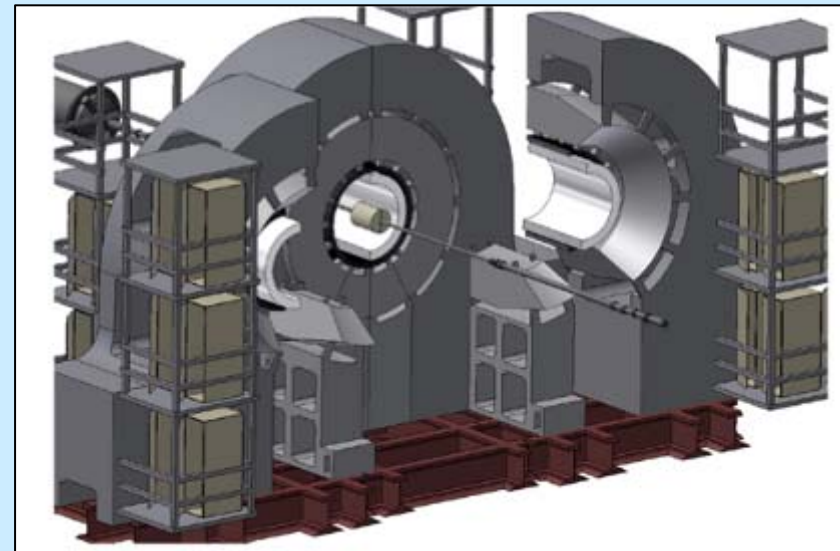
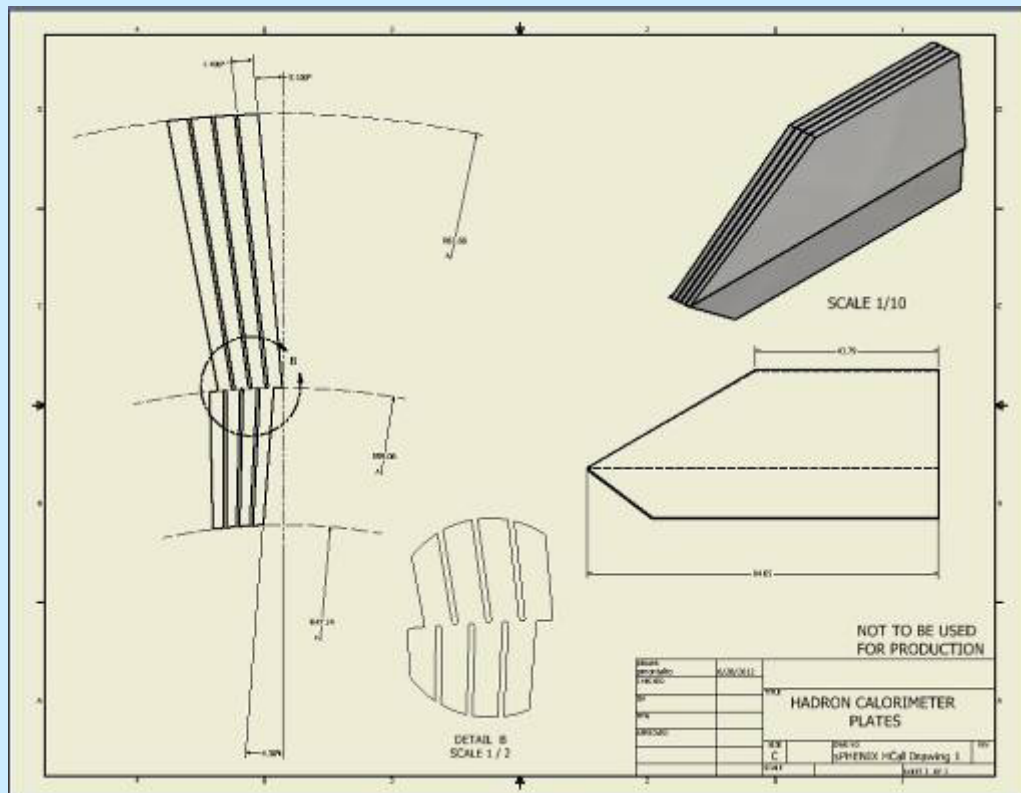
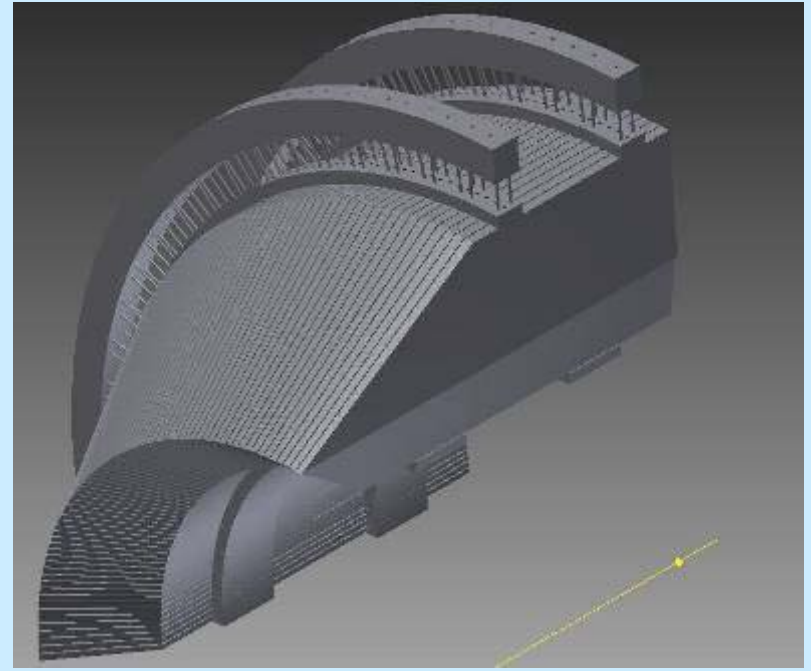
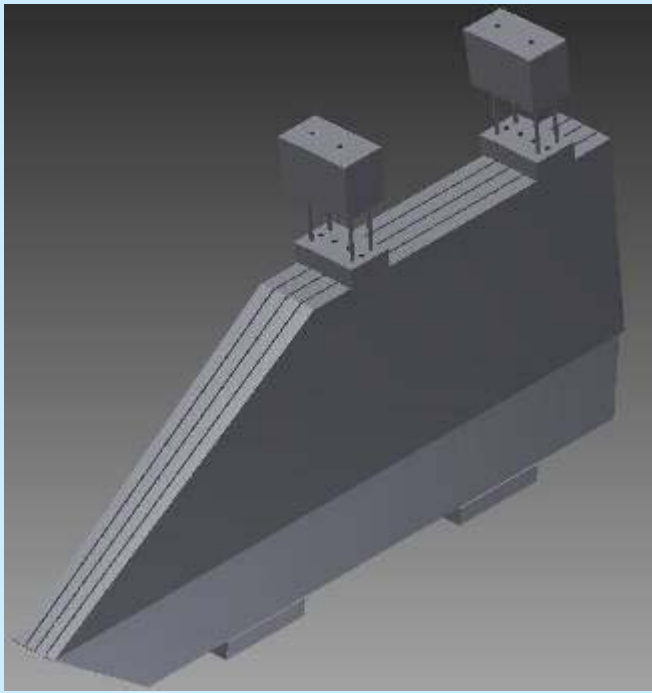


Fig. 3 The Plate Assembly

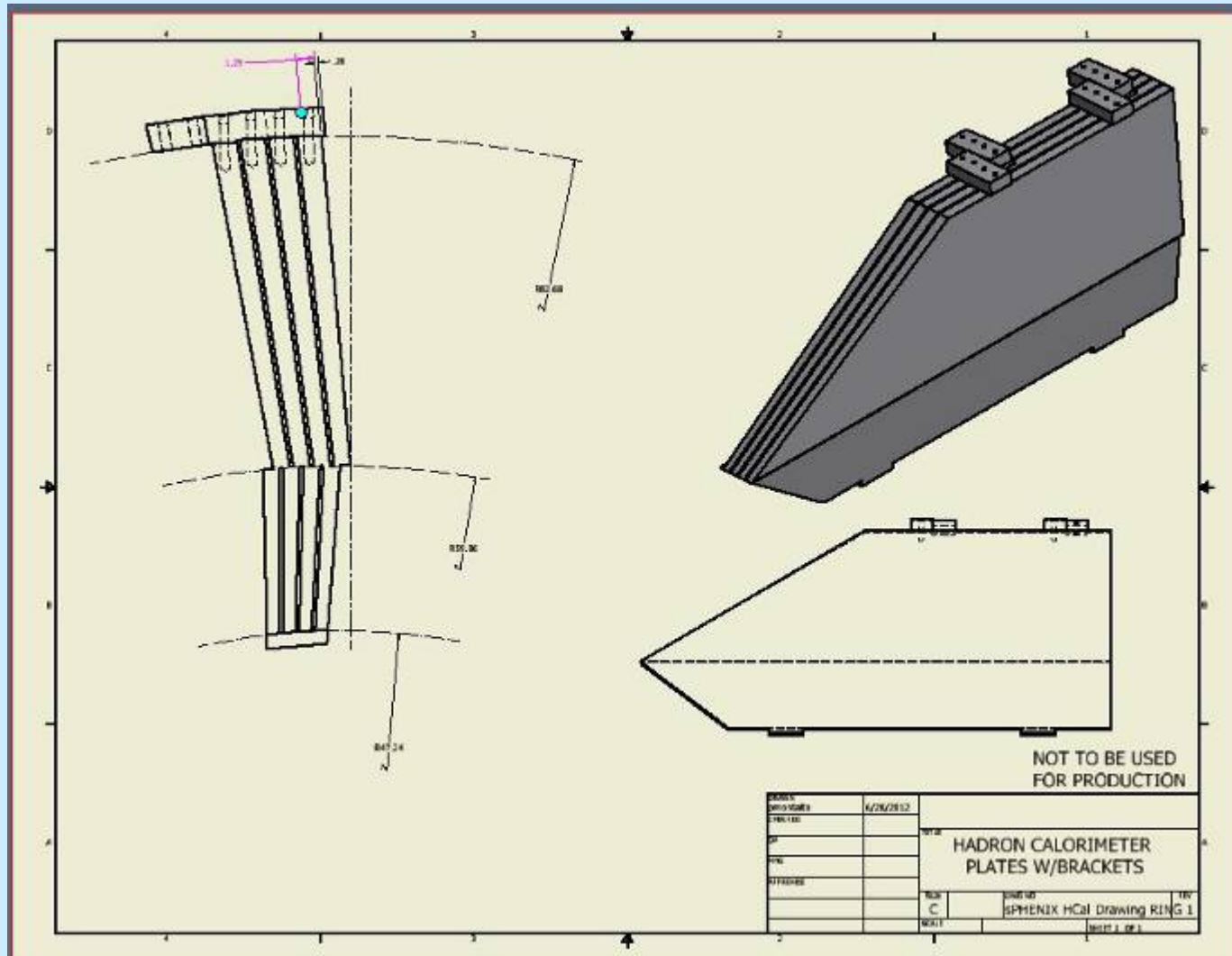
- Need support for the entirety of the sPHENIX experiment (includes HCal itself)
- Need to connect adjacent plates, both inner and outer segments
- How to fabricate? What processes would be “best?”
- Need to make HCal modular – needs to be disassembled easily to access inner parts
- Proper clearance – many cables and readout devices involved

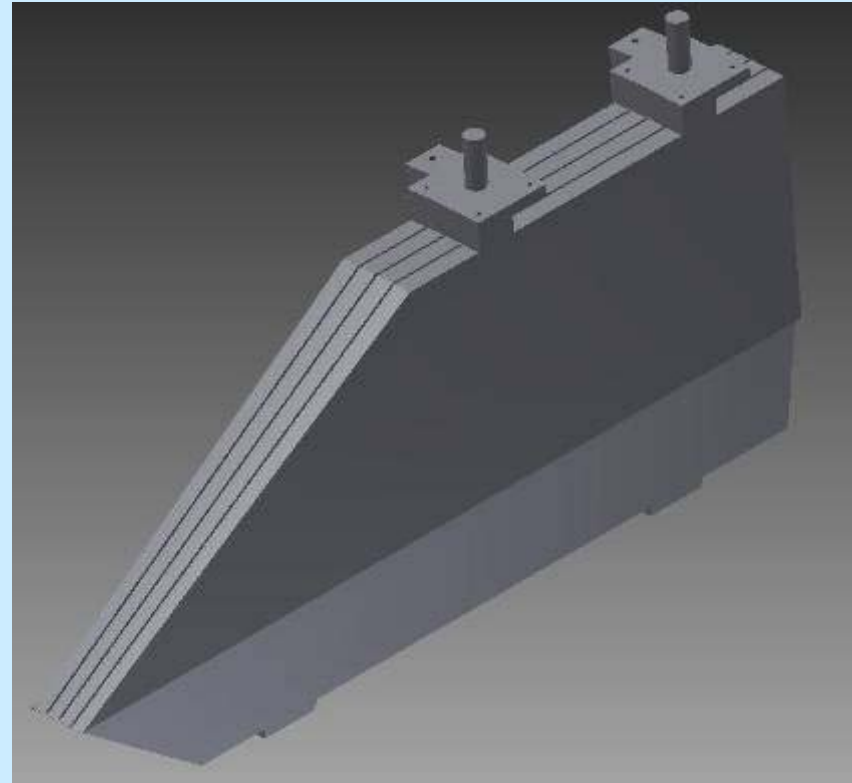
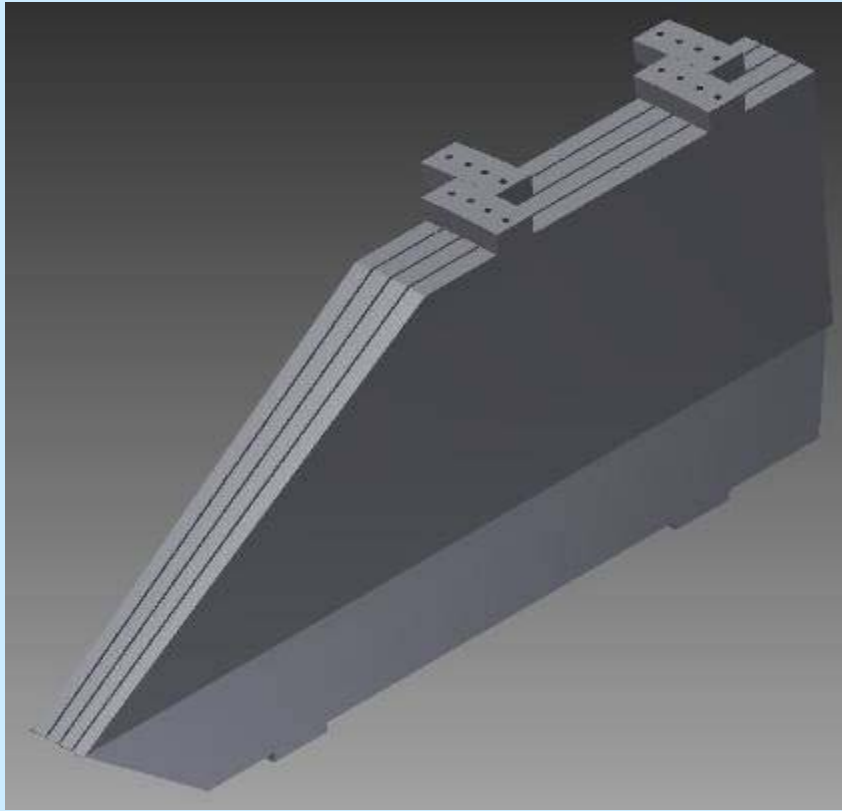




- Early designs consisted of large brackets that connected each group of four plates. However, these plates took up too much outer and inner surface area with not enough clearance for the readout devices
- Evolved into the pictures above, allowing more clearance and having an outer support structure. The spoke design was too intricate and unnecessarily complicated and limited access to the top of the device from multiple angles.

Current Iteration





Current iteration now has four support connectors and a plate with only a single bracket in the front and rear of the four plate assembly which would then connect to an outer support structure.

Programming the Low Voltage Distribution Controller

Louie-John Mistretta

(Worcester Polytechnic Institute, Worcester, MA 01609)

Steve Boose

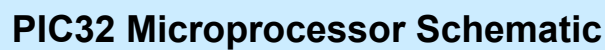
(Brookhaven National Laboratory, Upton, NY 11973)

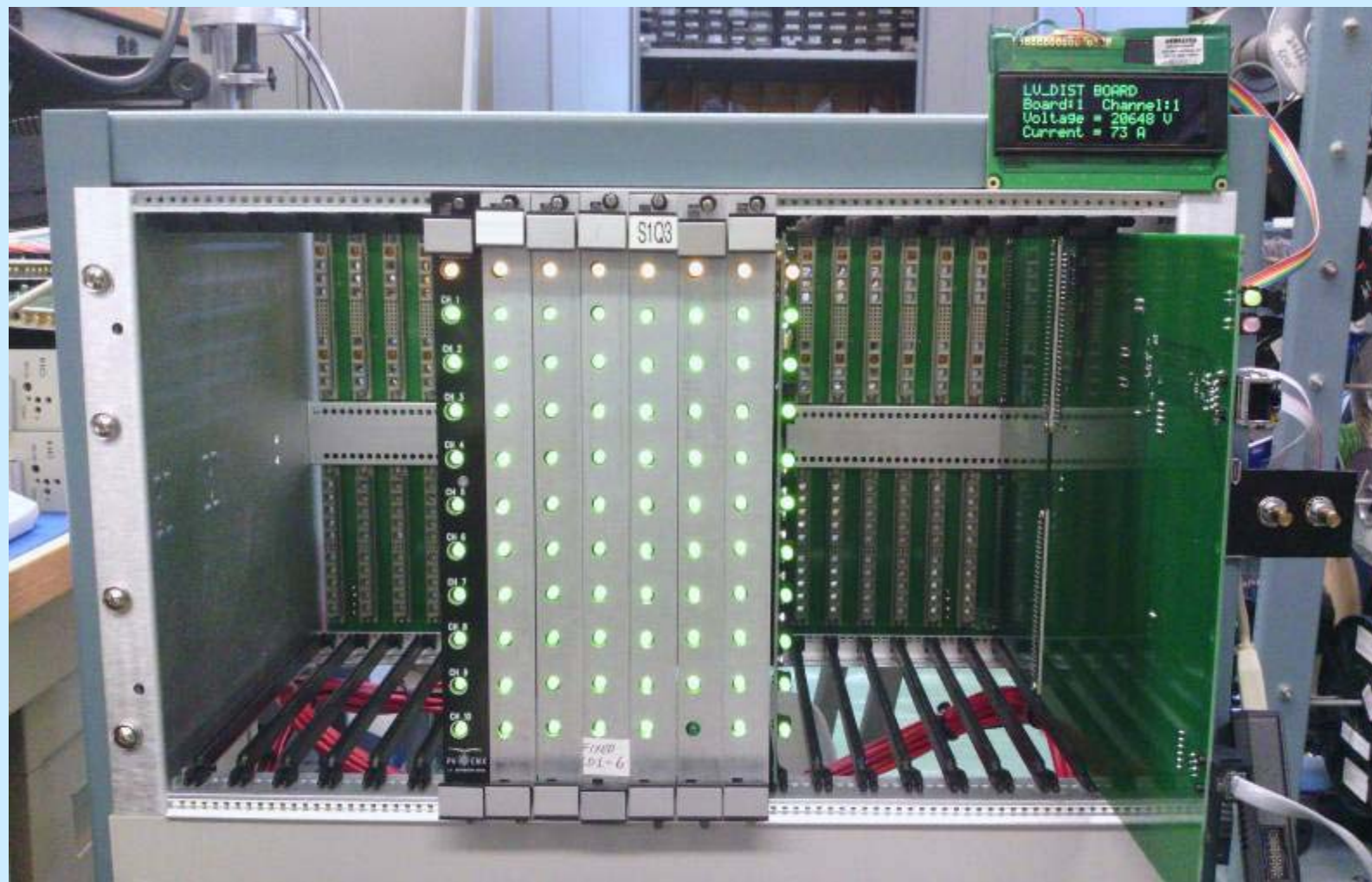


Low Voltage Distribution Board

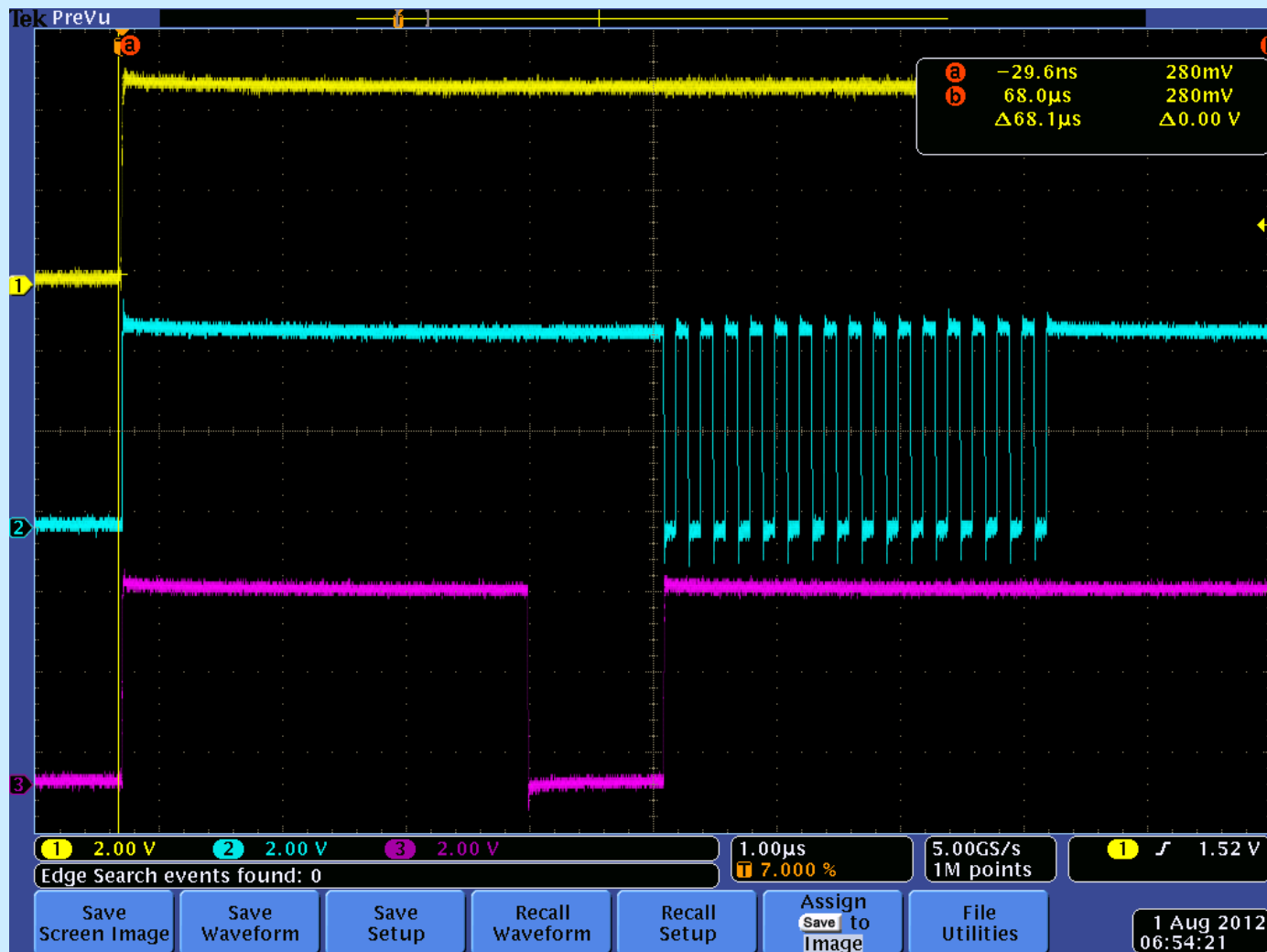


Backplane Board





Low Voltage Distribution Board controlling a rack of 8 backplane boards



A single board write sequence ~80.7μs

Requested CAD Support for 2012 Shutdown

TECHNICAL
SUPPORT
2012

Riggers - Disassemble and stow moveable shield wall and plug door - week of June 25

Riggers and Carpenters - remove dumbwaiter and ladder from EC - week of July 2

Carpenter - Assist with Station 1, MMS, MMN and DC West scaffolding and work platforms
- -7/23-Oct. 26 (2 weeks at beginning, 1 week at end, $\frac{1}{2}$ days at various intervals between)

Articulated manlift - For removal and re-installation of MPC N - week of 10/16

CAD Mech techs - remove and restore MMS and MMN lampshades - week of 7/23

Survey - VTX/FVTX at Chemistry and PHENIX IR - 10/8-11/9

Riggers - transport VTX/FVTX to IR from Chemistry - week of 10/29

Carpenters and Riggers - erect and disassemble Summer Sunday dance floor - 8/1-8/7

Riggers and Carpenters - restore dumbwaiter and ladder to EC - week of 11/26

Riggers - Assemble shield wall and Install plug door - 12/26-12/28

Blue Sheets and White Sheets - 12/3-12/21

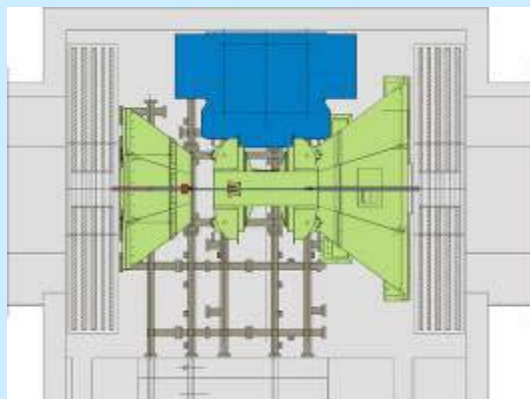
A/C evaluation and repairs, IR and rack room A/C's - complete by start of run 13

Procedures for Shutdown 2012

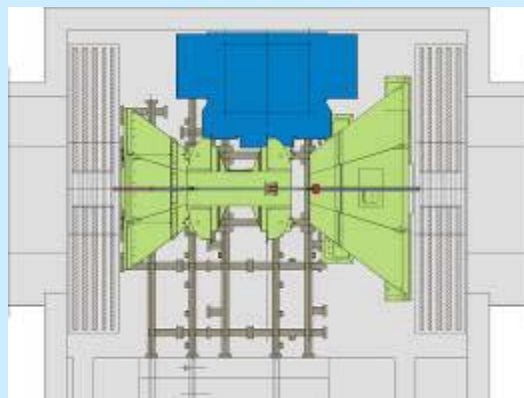
- Existing PHENIX General Purpose Recurring Task procedures - on line
 - VTX Removal - Done
 - FVTX/VTX installation - Done
 - VTX Survey - Done
 - FVTX Survey - Done
 - FVTX Cooling System Upgrades - Done
 - MuTr Maintenance & Upgrade (stations 1 2 & 3) - Done
 - MuTrigger Maintenance and Upgrade - Done
 - DC Repair - Incl. in WP
 - MPC removal and re-installation - incl in WP - Done
- Procedures will be part of 1 WP for VTX and FVTX
- Incl. in separate WP's for MMN and MMS entry

Work Permits for Shutdown 2012

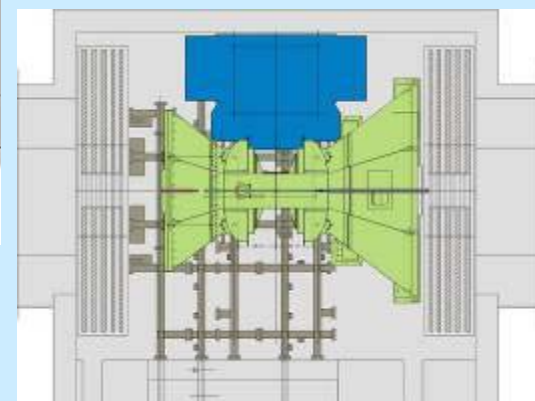
- Start of Shutdown (PHENIX) - Done
- VTX Removal/FVTX/VTX Installation - Approved
- MuTr/MuTrigger Maintenance and Upgrade 3 WP's:
Station 1, MMN and MMS work - at CAD for Approval
- RPC1 Cooling Upgrade (PHENIX) - Done
- DC West Repairs - in Design
- MPC repairs - Approved
- End of Shutdown (PHENIX)



CM is currently moved north to gain access to station 1 south. Work on RPC1 South, DC West, MPC South and MuTr Station 1 South.



After all work finished move CM south, reinstall MPCN complete RPC1 North work, survey step 1 for beampipe,



Move CM north complete beampipe and CM survey. Move MMS North to run position. VTX/FVTX work may be done in any configuration.

Shutdown Standard Tasks

- Open wall, disassemble wall, Remove MuID Collars,
- Move EC to AH, etc.

In Progress

VTX Strip-pixel post run tests

Done

FVTX post run tests

Done

Disassemble VTX/FVTX services

Done

Open Station 1 North, remove MPC North for repairs

Done

RPC1 North Cooling Upgrade (preliminary)

Done

Remove VTX/FVTX and transport to Chemistry Lab

In Progress

Remove MMS & MMN vertical East lampshades

In Progress

Summer Sunday (8/5) Prep and teardown

8/1-8/7/2012

Summer Sunday (RHIC)

8/5/2012

MuTr South Station 1 work

Install access (Sta. 1 work platforms)

Done

Disconnect Cables, hoses etc, ID/label all

8/6-8/10/2012

Remove FEE plates and chambers

8/13-8/17/2012

Station 2 Terminators and manifold upgrade through access opened by station 1 removal

8/20/-8/31/2012

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MPC South repairs	8/20-9/15/2012
RPC 1 South cooling upgrade	8/20-9/15/2012
Labor Day Holiday	9/3/2012
MuTr South Station 1 work (Cont'd)	
Clean/install new MuTr Sta. 1 chamber parts and upgrades (concurrent At RPC Factory)	8/20/-9/7/2012
Re-install chambers and FEE plates	9/10-9/14/2012
Re-cable, re-hose and test	9/10-9/28/2012
re-capacitation and air manifold upgrades	
Station 3 North and South (upper half)	7/23-9/30/2012
Repair upgrade, reassemble VTX/FVTX	7/23-10/5/2012
Test, survey (at Chemistry and IR) and re-install VTX/FVTX	In Progress
Substation breaker upgrade/test (CAD)	8/20-9/30
AH utility power distribution upgrade	In Progress
DC West maintenance (replace window)	9/15-10/15
RPC stations 1 and 3, north and south maintenance	As required
Other detector maintenance as required	As required
Infrastructure maintenance as required	As required
TBD prototype tasks	As required
Open Station 1 North, re-install MPC North	10/16-10/26/2012
RPC1 North Cooling upgrade (if not completed earlier)	10/16-10/26/2012

TECHNICAL SUPPORT ZONE

Veterans Day Holiday	11/12/2012
Pre-run commissioning and prep for run 13	11/1-12/31/2012
Prep for EC roll in	11/12-11/16/2012
Roll in EC	11/19-11/23/2012
Thanksgiving Holidays	11/22-23/2012
Prep IR for run	11/26-12/3/2010
Pink/Blue/White sheets	12/3-12/21/201
Christmas Holidays	12/24-25/2012
Start run 13	1/1/2013

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1. Ladder Safety - All fixed vertical ladders at PHENIX are out of service pending inspections. MMS Eyebrow ladder failed inspections and may not be used until deficiencies are corrected.



2. From Ray Karol:
Please remember to recycle only paper in the blue receptacles throughout the lab.

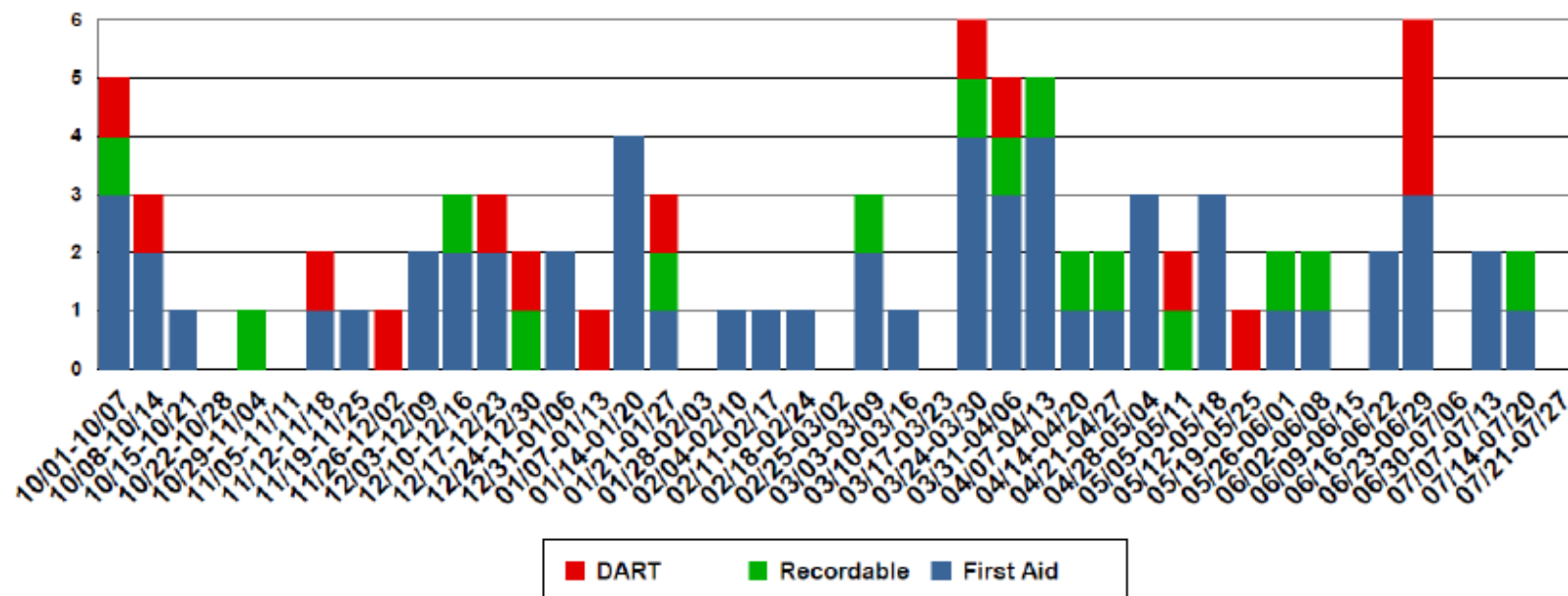
BNL makes money selling paper recyclables with a local contractor and the contractor does not want food or any regular wastes mixed in with the paper. IN the past BNL has almost lost the contract because the contractor refuses to sift through the paper wastes to remove food and other solid wastes (loose leafs, pens, pencils, etc.)



3. Training - new arriving workers (e.g. MuTr experts): please make sure you have the appropriate training, as specified in the work permit.



Injuries Per Week (FY)
As of 7/27/2012



Injury Status:

FY12 YTD: DART – 15, TRC – 30, First Aid – 56

FY11: DART – 27, TRC – 42, First Aid – 45

FY10: DART – 19, TRC – 33, First Aid – 52

FY12 Injury Listing: <https://intranet.bnl.gov/esh/shsd/seg/OccInj/BNLInjuries.aspx>

Recent Injuries

7/19/12	First Aid	A Service Contractor lacerated his arm performing janitorial work. He received first aid, and refused transport to the ER at the time. The next morning, he reported to the OMC and it was recommended that he go for sutures. He declined and returned to normal duties instead.
7/13/12	First Aid	A contractor employee was struck in eye by debris. At the OMC, he received first aid.

Recent Events		
7/27/12	Non-Reportable	About one quart of antifreeze solution leaked from student's private vehicle's radiator. The spill was on blacktop and no soil was affected. (Event Link)
7/26/12	Non-Reportable	While C-AD workers were performing decommissioning work on top of a shield block in B912, an F&O supervisor observing the work felt that the worker was too close to the edge of the block. The supervisor correctly requested that the worker come down so he could discuss his concern and prevent future injury. The worker immediately came down from the shield block for this discussion. The F&O supervisor and the worker went to the job supervisor who then reviewed the restrictions on this type of work with the work crew. Although this was only a work pause, the worker, job supervisor, and the C-AD ESSHQ Division Head, and the F&O North Facility Complex Manager took this issue seriously and verified that the work could continue in a safe manner. (Event Link)
7/26/12	SC-4	A contractor was operating a leased JLG 860SJ Manlift approximately six feet off the ground when he began having difficulty in articulating the basket. A DOE inspector and NSLS-II Construction Safety Engineer (CSE) in the area asked him to lower the basket to the ground to investigate. The CSE who had knowledge of similar issues with this type of lift examined the smaller platform-rotator bolts around the main center pin that support the bucket to the boom. These bolts appeared to be intact, but the broken top sections were able to be removed by hand. They were completely sheared but since they are oriented vertically, remained in their location and visually looked intact. (Event Link)
7/25/12	Non-Reportable	A dump truck spilled approximately 15 gallons of hydraulic oil on stone blend at the concrete recycling-stockyard. (Event Link)
7/25/12	SC-BNL	Radioactive samples were found during an office clean out of a retiree's former office. The samples appear to be legacy materials. There was no spread of contamination as all packaging was intact. Radioactivity was slightly above background. (Event Link)
7/24/12	SC-BNL	Building 153 was evacuated and F/R responded due to an activated smoke detector in the first floor south wing. It was determined that food on the stove set the smoke detector off. The area was ventilated and the alarm was reset. No further action was taken by the FD. (Event Link)
7/19/12	SC-BNL	A stop work order was issued during a liquid nitrogen transfer operation. An individual subsequently deviated from the stop work procedure. An investigation and corrective actions were initiated on 7/19/12. (Event Link)

Where To Find PHENIX Engineering Info

Summer Sunday at PHENIX This Sunday



We are into the Dog Days of Summer



http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm

